



# Wetland Mitigation Crediting & Performance

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**BWSR Academy 2014**





# Overview

- Quick Review of Crediting
- Banking vs Impact Approvals & the Private Market
- Basic Requirements & Considerations for Crediting
- Credit Action Examples with Discussion
- Performance Standards



## Generally we know.....

The more degraded a wetland is, the more “functional lift” (gain) from restoring it.

Some restorative actions produce more gain than others.

So in MN, “credit actions” are differentiated by:

- **Condition of wetland to be restored** and
- **Type of restorative action proposed**



# Wetland Condition

- Fully drained
- Partially drained
- Farmed
- Exceptional/unique
- Vegetatively degraded

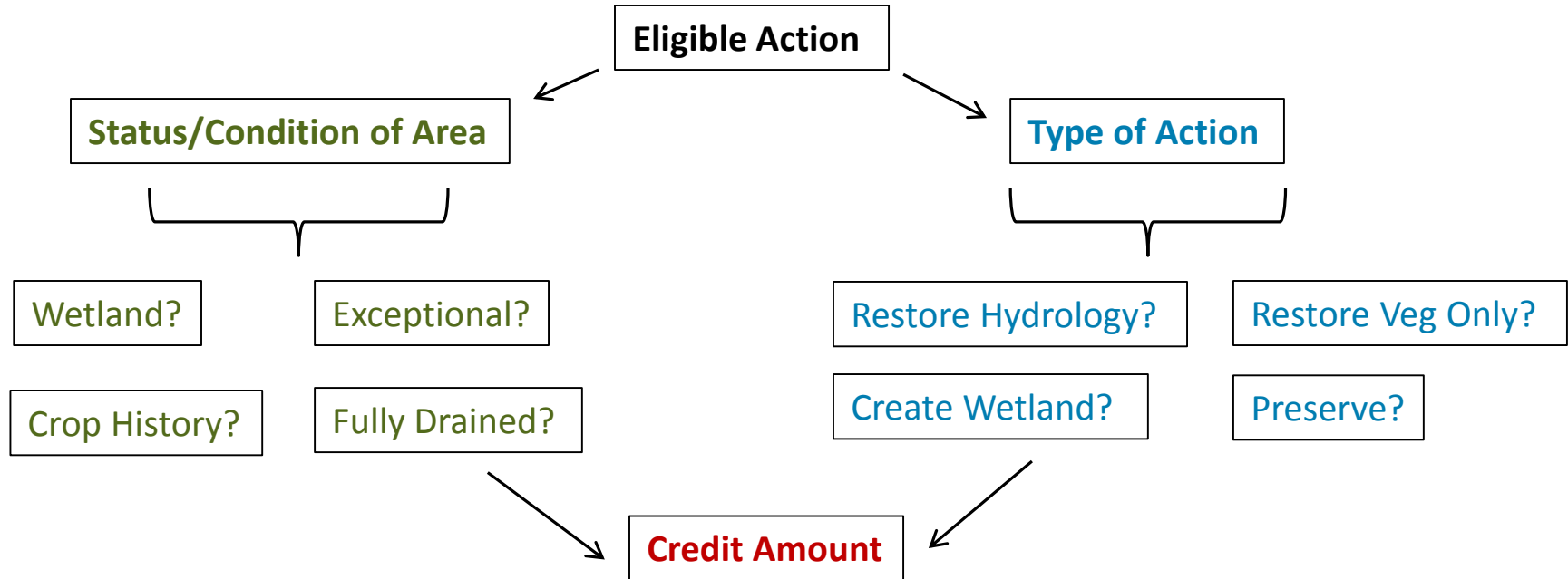


# Restorative Actions

- Restore
- Create
- Protect
- Buffer
- Enhance



# Compensatory Actions





Action	Subpart	Percent of Acreage Receiving Credit <sup>1</sup>	Key Requirements <sup>2</sup>
Establish upland buffer adjacent to a wetland	2	10, 25, or 50	<ul style="list-style-type: none"> <li>Is upland adjacent to replacement wetland.</li> </ul>
Restoration of a completely drained/filled wetland	3	100	<ul style="list-style-type: none"> <li>Is currently a non-wetland.</li> <li>Was historically a wetland.</li> <li>Must restore natural hydrology and native vegetation.</li> </ul>
Restoration of a partially drained/filled wetland with cropping history	4A	100	<ul style="list-style-type: none"> <li>Is currently a wetland.</li> <li>Was cropped or in a crop rotation at least 10 of the last 20 years.</li> <li>Must restore natural hydrology and native vegetation.</li> </ul>
Restoration of a partially drained/filled wetland without cropping history	4B	50	<ul style="list-style-type: none"> <li>Is currently a wetland.</li> <li>Must restore natural hydrology and native vegetation.</li> </ul>
Vegetative restoration of a farmed wetland in BSA's 2, 3, and 4	5A	90	<ul style="list-style-type: none"> <li>Was cropped or in a crop rotation at least 10 of the last 20 years.</li> <li>Cannot have existing hydrologic alteration associated with drainage (tile, ditch, etc.).</li> </ul>
Vegetative restoration of a farmed wetland in BSA's 1, 5, 6, 7, 8, 9, and 10	5B	50	<ul style="list-style-type: none"> <li>Was cropped or in a crop rotation at least 10 of the last 20 years.</li> <li>Cannot have existing hydrologic alteration associated with drainage (tile, ditch, etc.).</li> </ul>
Protection of a wetland restored under expired conservation contracts/easements	6	75	<ul style="list-style-type: none"> <li>Was previously restored.</li> <li>Landowner has the right to drain or fill the wetland upon termination of the conservation contract/easement.</li> </ul>
Creation of a wetland	7	75	<ul style="list-style-type: none"> <li>Is currently non-wetland, but was not historically a wetland.</li> <li>Must meet certain design criteria (see WCA rule) if part of a wetland quality treatment system.</li> </ul>
Restore and protect a wetland with exceptional natural resource value	8	Variable	<ul style="list-style-type: none"> <li>Must include a restoration component.</li> <li>Must be protected by permanent conservation easement.</li> <li>Technical Evaluation Panel must determine eligibility for this action (see WCA rule and BWSR guidance document for specific criteria).</li> </ul>
Preserve a wetland	9	12.5	<ul style="list-style-type: none"> <li>Is located in a &gt;80% area of the State.</li> <li>Must be protected by permanent conservation easement.</li> <li>Technical Evaluation Panel must determine eligibility for this action (see WCA rule and BWSR guidance document for specific criteria).</li> </ul>



# Consistency in Crediting and Performance of Banks is an Important Issue

Why?



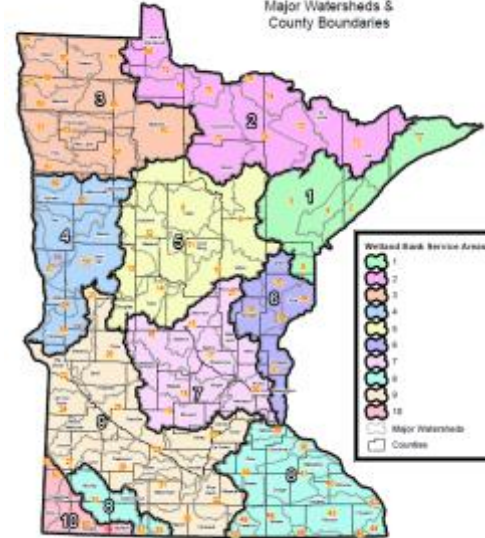
# Bank vs Impact Project Comparison



Impact projects are generally local in scope.

Wetland Bank Service Areas

With  
Major Watersheds &  
County Boundaries



Bank projects are regional or statewide in scope



# Bank vs Impact Project Comparison

- Projects that impact wetlands are not typically “competing” with other projects in different LGUs.
- Wetland banking projects result in credits that are competitively marketed to buyers.

# Consistency

Consistent crediting and standards creates a level playing field in the competitive market.



**But what about flexibility? Not every landscape is the same.**



# Balance

Should be a balance between flexibility and consistency.





# Flexibility is Option 2

- First see if project fits eligible actions and associated crediting.
- Possibly consider flexibility if it does not.





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With this in mind, let's look at the credit actions and some examples of where their applicability is not clear.



## Subpart 3 – Restoration of completely drained/filled wetland

- Must currently be non-wetland.
- Must have been historically wetland at one time.
- Must restore hydrology and vegetation.





## Typical documentation for Subpart 3

- Must currently be non-wetland – **Wetland delineation**
- Must have been historically wetland at one time – **Soil map, historic air photos**
- Must restore hydrology and vegetation – **evidence of hydrologic alteration, existing vegetation mapping/summary**



## Subpart 4a – Restoration of partially drained/filled wetland with crop history

- Must currently be wetland.
- Must have been cropped at least 10 of last 20 years.
- Must restore hydrology and vegetation.



## Typical documentation for Subpart 4a

- Must currently be wetland – **Wetland delineation**
- Must have been cropped at least 10 of last 20 years – **air photo review, FSA records**
- Must restore hydrology and vegetation – **evidence of hydrologic alteration**



## **Subpart 4b – Restoration of partially drained/filled wetland without crop history**

- **Must be currently wetland.**
- **Must restore hydrology and vegetation.**



## Typical documentation for Subpart 4b

- Must be currently wetland – **Wetland delineation**
- Must restore hydrology and vegetation – **evidence of hydrologic alteration, existing vegetation mapping/summary**



## Subparts 5a & 5b – Vegetative restoration of farmed wetland

- Must be currently wetland.
- Must have been cropped at least 10 of the last 20 years.
- Cannot have existing drainage (tile, ditch, etc.).



## Typical documentation for Subparts 5a & 5b

- Must currently be wetland – **Wetland delineation**
- Must have been cropped at least 10 of last 20 years – **air photo review, FSA records**
- Cannot have existing drainage – **existing conditions map, current air photo, narrative**



## **Subpart 6 – Protection of wetlands restored under expired conservation contracts**

- **Is currently wetland.**
- **Was previously restored.**
- **Can be legally drained/filled upon termination of contract.**





# Typical documentation for Subpart 6

- Is currently wetland – **wetland delineation**
- Was previously restored – **contract, plans, air photos, as-built info**
- Can be legally drained/filled upon termination of contract - **contract**



## Subpart 7 – Wetland creation

- Is currently non-wetland.
- Was not historically wetland.
- Must meet specific design criteria if part of a water quality treatment system.



# Typical documentation for Subpart 7

- Is currently non-wetland – **wetland delineation**
- Was not historically wetland – **soils map, historic air photos**
- Must meet specific design criteria if part of a water quality treatment system – **stormwater modeling, plans, narrative**



## Subpart 8 – Restore & protect wetland with exceptional value

- Must include a restoration component.
- Must be protected by easement.
- TEP must determine it is eligible.



# Typical documentation for Subpart 8

- Must include a restoration component - **plans**
- Must be protected by easement – **proposed easement boundary plan sheet**
- TEP must determine it is eligible – **see guidance**



## Subpart 9 – Preservation

- >80% areas only.
- Must be protected by easement.
- TEP must determine it is eligible.



# Typical documentation for Subpart 9

- >80% areas only – **location map**
- Must be protected by easement – **proposed easement boundary plan sheet**
- TEP must determine it is eligible – **see guidance**

# Examples

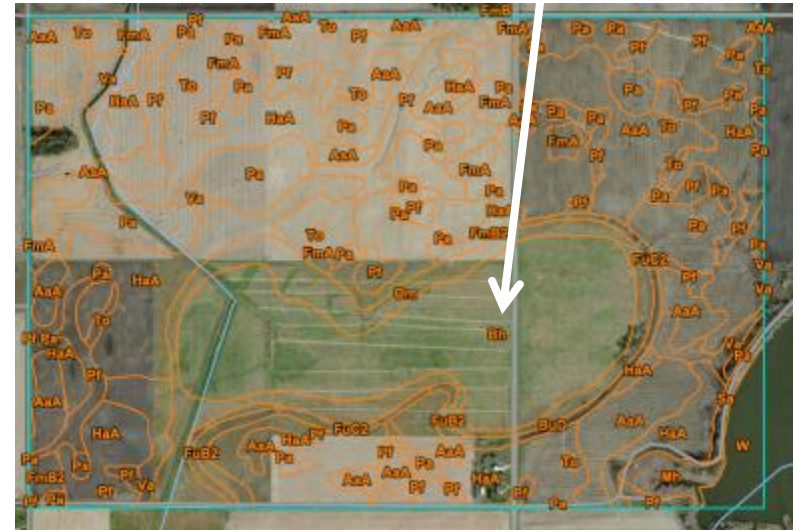


Case  
Examples



# Proposed Restoration for Bank

Blue Earth Silt Loam - Hydric





# It used to be wetland, but is it wetland now?

Drain tiles present



If wetland now – up to 50% credit (Subp. 4b)

If not wetland – up to 100% credit. (Subp. 3)

It has been in CRP for the last 20 yrs.



Does that matter?

**Not for Subp. 3 or 4b if the hydrology has not been restored. Subp. 6 only applies if it has been restored.**

## What about Subp. 4a?



**If cropping history prior to CRP, then any existing wetland could qualify for credit based on cropping history.**

## What about Subp. 4a?



**Problem – only 8 photos  
available prior to CRP.**

# Factors considered by the TEP



**Affidavit of cropping history prior to CRP.**

**Available photos show clear, consistent cropping over the years.**

**Effective drainage mechanism in place.**

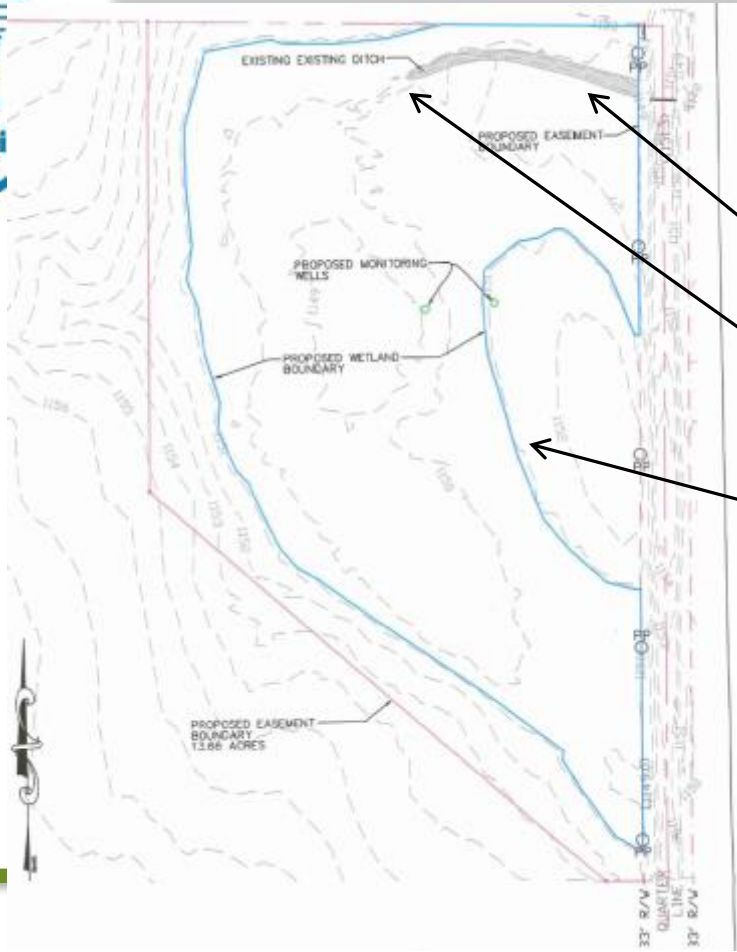


# Flexibility used by the TEP



In recognition of cropping history prior to CRP, Subp. 4a determined to be applicable.

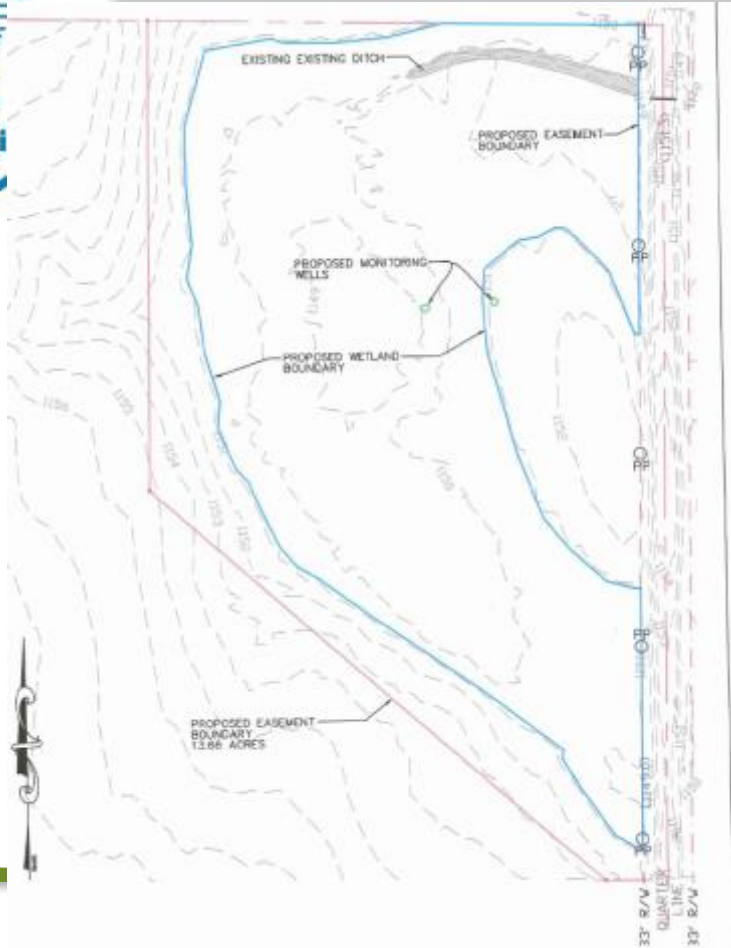
Because complete 20-yr. cropping history documentation lacking and wetland has at least “partially restored” itself over time due to lack of maintenance, 75% credit.



# Proposed Bank

- Proposal to fill ditch.
- Ditch plug per CRP.
- A “proposed” wetland boundary is indicated.
- Subp. 6 credit action proposed.





# Issues/Questions

- Is the wetland fully restored or not?
- If not, Subp. 6 is not applicable, needs further hydrologic restoration (Subp. 3, 4a, or 4b).



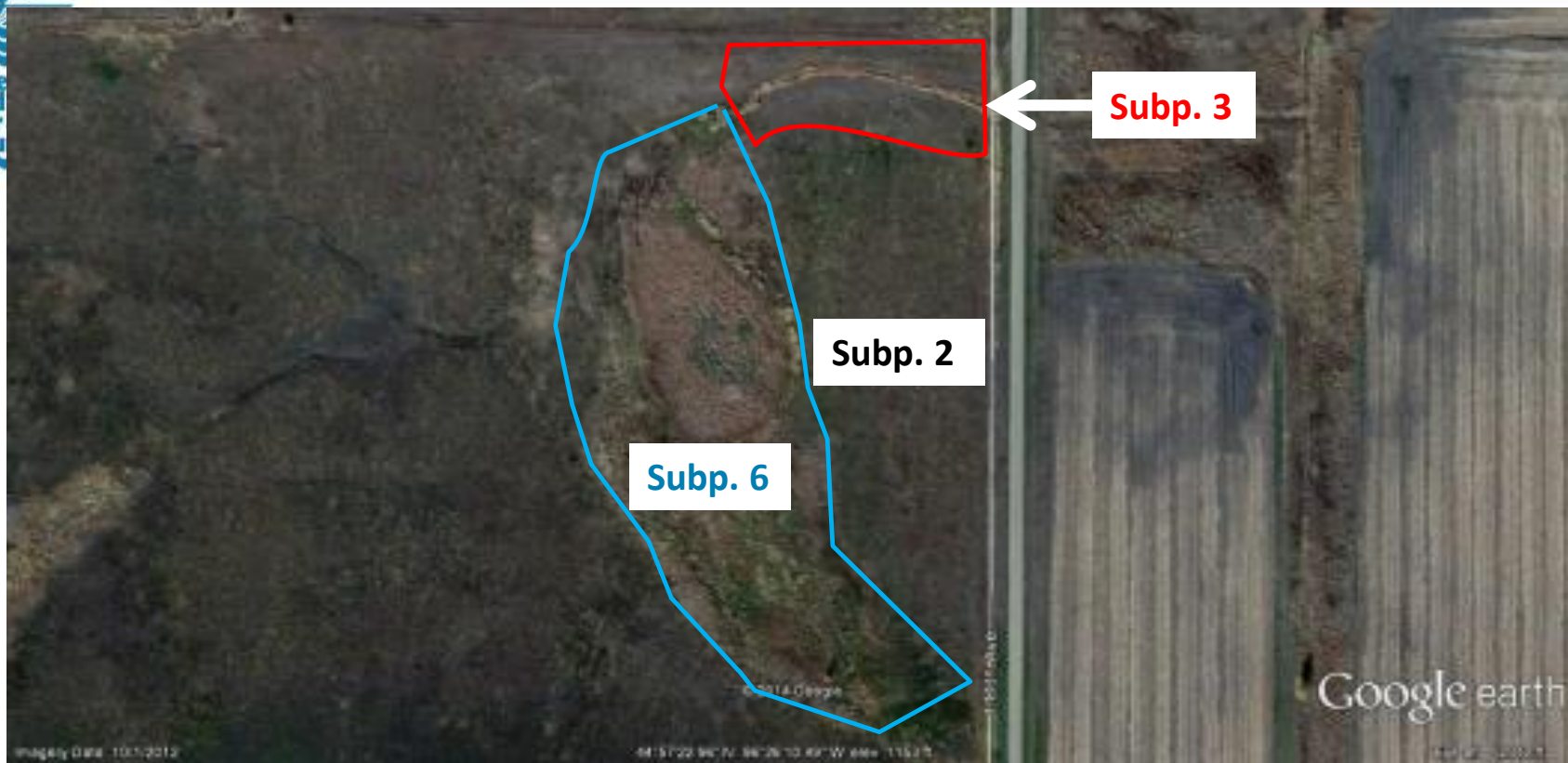
Could be restored?— Subp. 3 or 4

Already restored — Subp. 6



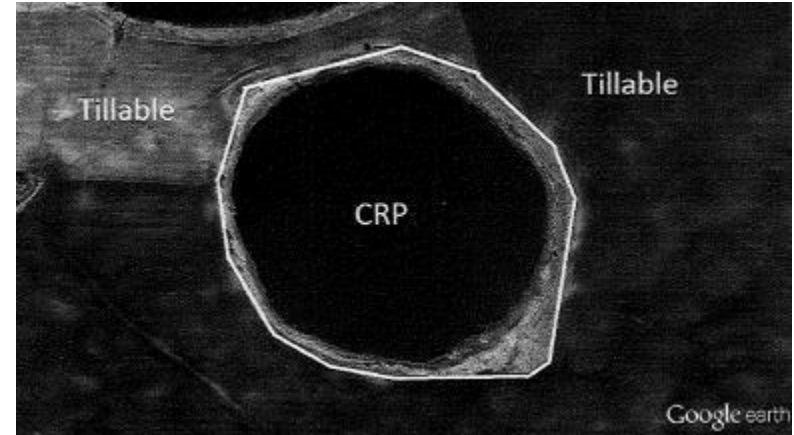
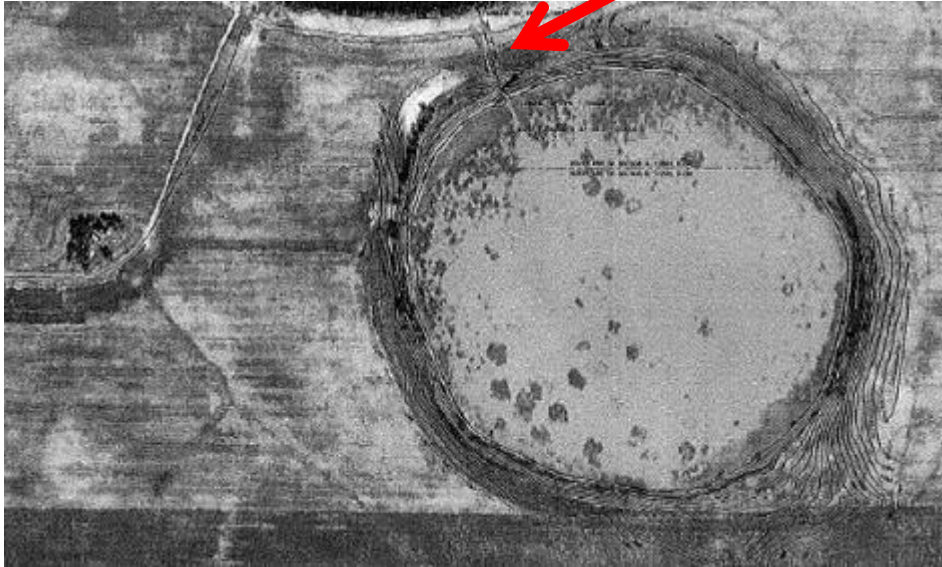
## Needed:

- Delineation of current wetland.
- Rationale for predicted further restoration as a result of ditch filling.
- Application of appropriate Subparts.

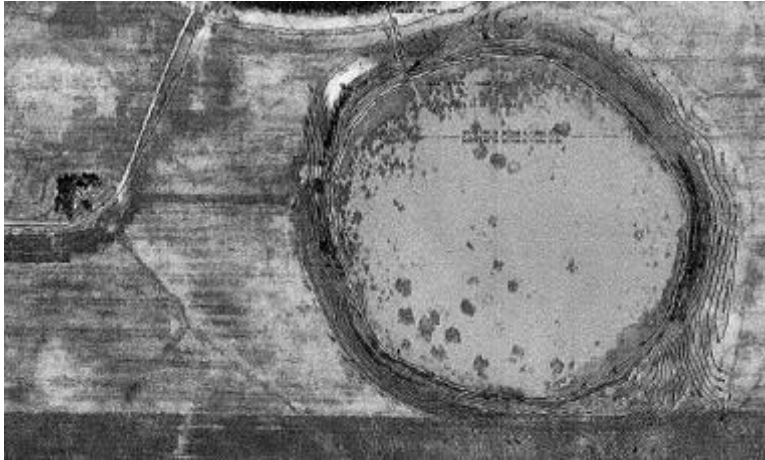


# Bank Application

Drainage ditch







- “holds” 2-3 feet of water.
- Has historically been “pumped down” to allow farming.
- Restoration proposed by cessation of pumping.
- Pump has been removed.
- Water level managed under CRP.
- Subp. 6 crediting claimed



# Issues/Questions

- If it already holds water, does it need restoration?
- If the pump has already been removed, then has it already been restored and if so, was this done via CRP or just recently?
- What about the outlet, will it remain after the pump removal?



- Subp. 6 applies only if it was restored under CRP contract.
- If not, then Subp.4a or 4b (restoration of partially drained wetland).
- If 4a, then need to know pre-CRP cropping history.



## Critical questions to determine credit action in this example:

- Is it currently restored? (consider historic vs current hydrologic regime)
- Is it currently wetland? (based on current hydrologic condition without manipulation)
- Does it have supporting cropping history?





**If it is restored and wetland – Subp. 6.**

**If it is restored but not permanent, could make it permanent and use Subp. 6.**

**If not restored and is wetland, restore and claim Subp. 4.**

**If not restored and not wetland, restore and claim Subp. 3.**



# Summary of Crediting

- Make sure applicant demonstrates that they meet crediting subpart requirements.
- If it does not fit a subpart, but seems “credit-worthy”, consider flexibility.
- Contact BWSR. We see all applications, perhaps there is another example you can follow.

# Performance Standards & Monitoring





# Performance Standards in MN

## Typically:

- Veg diversity (number of species present, number of dominant species present)
- Native veg coverage (% areal coverage)
- Nonnative veg coverage (% areal coverage)
- Wetland hydrology standard and/or Corps' target wetland hydrology standards



# Issues with Performance Standards in MN

- Inconsistent across the state
- Not much thought as to their appropriateness (“Cut and Paste”)
- Many consultants say to TEP “just tell me what you want them to be”
- Many TEPs say to BWSR “just tell me what they should be”
- Many are written poorly and contradictory



# Issues with Performance Standards in MN

- Highly skewed to veg diversity function, no consideration of other functions
- Often do not address the reality of cattails and rcg in altered landscapes
- All or nothing approach
- “Target hydrology standards” don’t make sense when you guess wrong at what the target should be, but still have wetland hydrology.



# Example of Recent Performance Standards Submitted

## Shallow marsh

- Dominated by 3 or more native species
- At least 4 native species occurring for 2 consecutive years
- Or high quality MnRAM community score
  - Dominated by 3 or more native species, cattails <40% cover, purple loosestrife <20% cover

## Entire wetland, all communities

- 75% of all species FAC or wetter
- 0% purple loosestrife
- <5% nonnative, invasive





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# Performance and Monitoring are Linked

- Dominated by 3 or more native species – how do we measure dominance? 50/20 rule, relative cover, plots, point-intercept, “eyeball it”????
- At least 4 native species occurring for 2 consecutive years – so one individual plant in a 100 acres of wetland is good enough??? What if they are present in year 3, not year 4, but all over the place in year 5??? What if they are annuals?



# Performance and Monitoring are Linked

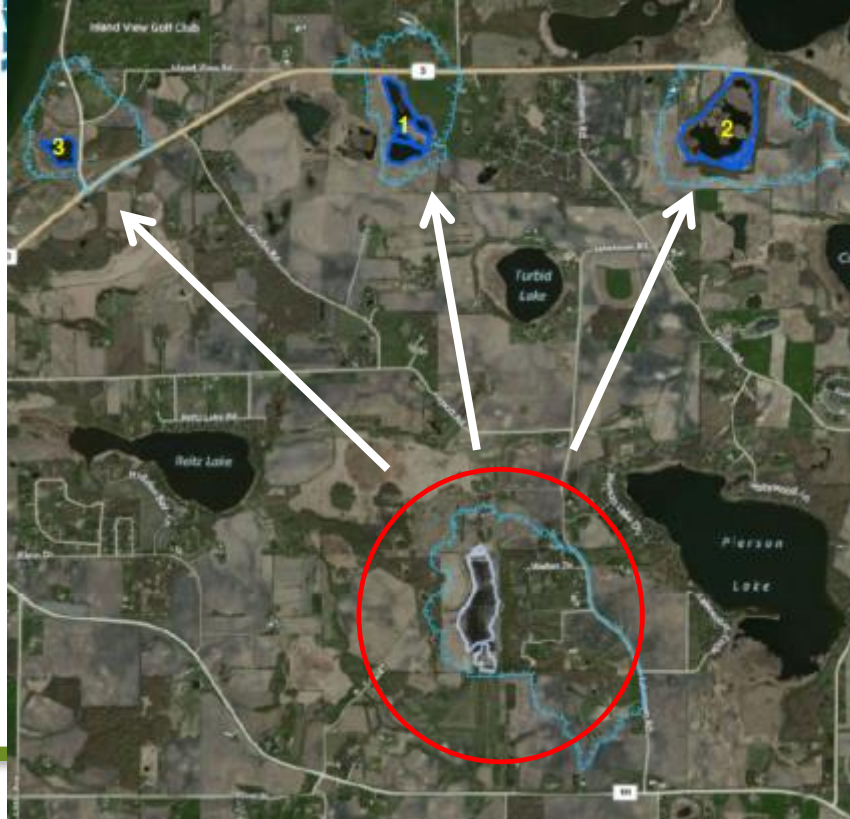
- 75% of all species FAC or wetter – **complete inventory of all species???**
- 0% purple loosestrife – **how exhaustive do you have to be to determine this?**
- <5% nonnative, invasive - **plots, point-intercept, “eyeball it”????**  
**Does hybrid cattail count and how are you going to distinguish out in the middle of the marsh?**



# Improvements

- Consider reference wetlands
- Recognize benefits of hydrologic restoration
- Tiered crediting approach
- Standard must be measurable
- Think about a different group of people evaluating it 5 years from now based on approved plan.

# Reference Wetlands



- If your best wetland has 25% rcg, then is it reasonable to expect a better outcome?
- If there are no “good” wetlands in your area, expand area, but keep to general ecoregion (prairie, north woods, etc.).



Proposed Bank

High quality adjacent  
wetland (reference?)

# Tiered Crediting

Level of Vegetative Restoration Success in Area South of Berm	% Credit	Compensatory Credit Ratio	Justification
Low MnRAM plant community rating	50	2 : 1	Still provides a moderate to high level of water quality function due to the hydrologic restoration.
Medium MnRAM plant community rating	75%	1.3 : 1	Increased functions due to diversity and integrity of native vegetation.
High MnRAM plant community rating	100%	1 : 1	Full restoration of plant community.

Incentive to achieve high quality veg, but recognition of hydrologic benefits.



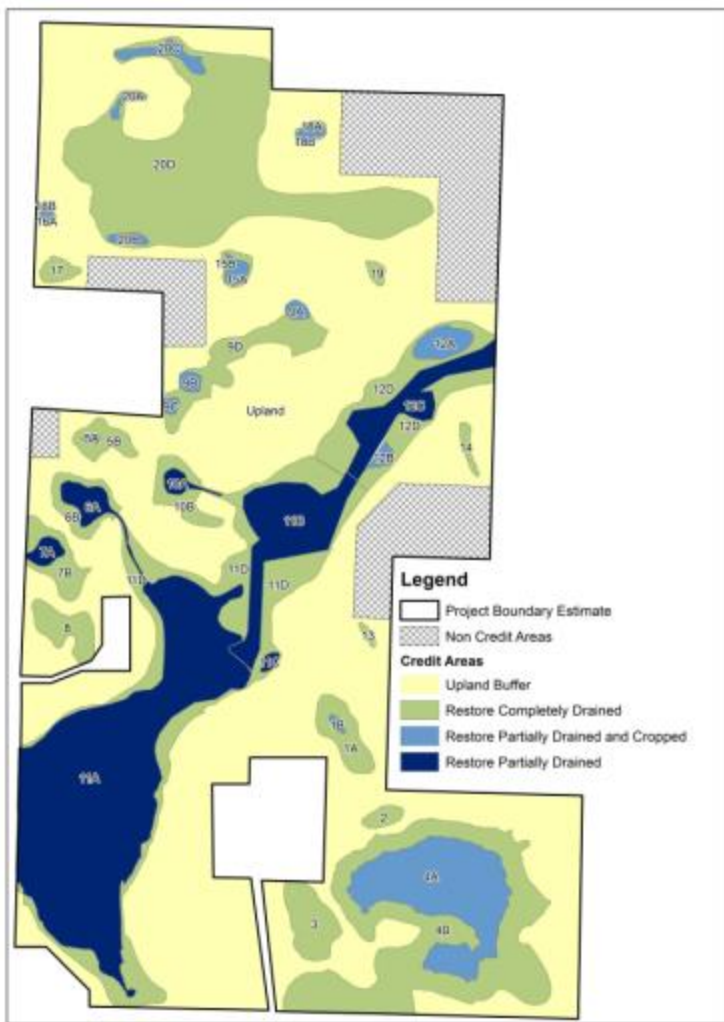
# Meaningful, Measurable Standards

- “Treat rcg at least twice” – that is an action, not a performance measure. What if they get high quality by natural regeneration? Do we care how it was achieved?
- “0 percent invasives” – can 0% be verified?
- “Dominance of at least 10 native species” – how is dominance defined? Do they all have to be dominant?



# An Example

- $\geq 10$  native perennial hydrophytes cumulatively comprise at least 80% overall cover.
- Averaged across all wetlands.
- If one or more basins significantly deviate from average, split out and credit separately.



# Hydrology Standards

Standards that exceed basic wetland hydrology can be used to help categorize type (ex. shallow marsh vs wet meadow), but should *not* be used to deny credit if the wetland was in fact restored.

← Predicted this, but got that. →  
Does that mean no credit?





# Hydrology Standards

If existing wetland is to be restored, then standard should be more than just basic wetland hydrology.

For example, a partially drained wetland that is seasonally flooded could have a standard more consistent with a shallow marsh – perhaps water table at surface for  $\geq 30$  days.



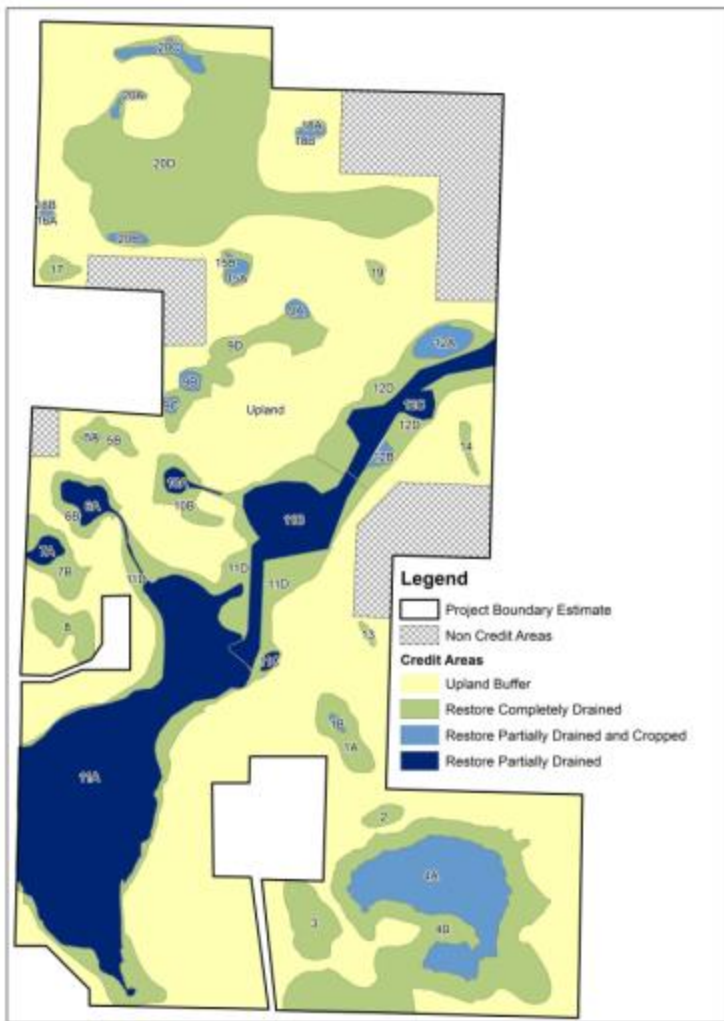
# Hydrology Standards

**Tying standard to a reference wetland being monitored allows for increased flexibility to account for variable climatic conditions.**

# An Example

## Hydrology

- Water table generally  $\leq 12$  inches from surface for  $\geq 14$  consecutive days.
- And/or comparable to reference wetland (also being monitored).





## In Summary

Consistency in crediting is important.

Consider exercising flexibility only if subpart application and crediting is unclear.

Make sure performance standards are realistic, measurable, and reflective of all important functions.





# Obligatory Parting Photos - MN Mitigation Projects

